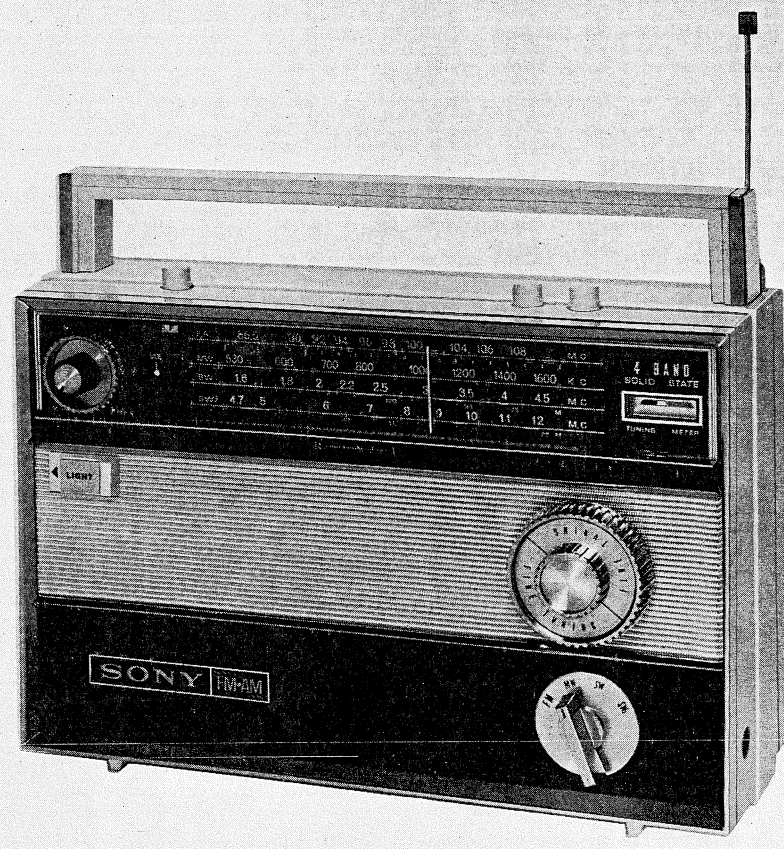
TFM-1000W



Specifications

Circuit:	14 Transistor Superheterodyne
Frequency Coverage:	FM 86.5~108 Mc (3.53~2.73 m)
	MW 530~1,605 Kc (566~187 m)
	SW_1 1.6~4.5 Mc (187.5~66.5 m)
	SW_2 4.7~12 Mc (63.8~25 m)
Antenna System:	FM/SW Built-in Telescopic Antenna
	MW Built-in Ferrite Bar Antenna
	Jack for Wire Antenna
Intermediate Frequency:	FM 10.7 Mc, AM 455 Kc
Maximum Sensitivity:	FM 0.95μV, MW 27μV/m
(at 10 mW output)	SW_1 1.8μV, SW_2 1.6μV
Selectivity:	31 dB at 10 Kc off resonance, at 1,400 Kc
Output Power:	820 mW (undistorted)
	1.3 W (maximum)
Current Drain:	26 mA (FM/AM) at zero signal, 250 mA at 820 mW output
Speaker:	10×15 cm (4″×6″) PM dynamic, 8Ω
Power Source:	Four "D" Size Flashlight Batteries, 6V in total
	or House Current by using SONY AC Power Adaptor
Dimensions:	218(H)×264(W)×103(D) mm
	(8-9/16×10-3/8×4-1/16″)
Weight:	2.54 Kgs. (5.6 lbs) with Batteries

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Removal of Chassis

(1) Remove the two Back Cover Holding Screws and open the Back Cover. Take out all the Batteries.
(2) Remove the Tuning, Fine Tuning, Band Setting, Volume Control, and Tone Control Knobs by pulling them out.
(3) Push the Local, AFC, and Power Switch Buttons.
(4) Remove the five Nuts marked with △ shown in Fig. 1 and 2.
(5) Unsolder the five leads marked with ▲ shown in Fig. 2.
(6) Unsolder the Blue leads at the Volume Control coming from the AUX in Jack.
(7) Remove the Chassis from the Cabinet gently taking care not to cut the leads.

Removal of CP Circuit Board

(1) Remove the four Screws marked with ○ shown in Fig. 2.
(2) Unsolder all the leads on the CP Circuit Board coming from the IF Circuit Board, MW Ferrite Bar Antenna Coil, and FM Tuner.
(3) Remove the CP Circuit Board from the Chassis gently taking care not to cut the leads.

Removal of FM Tuner Circuit Board (FMC-6AW)

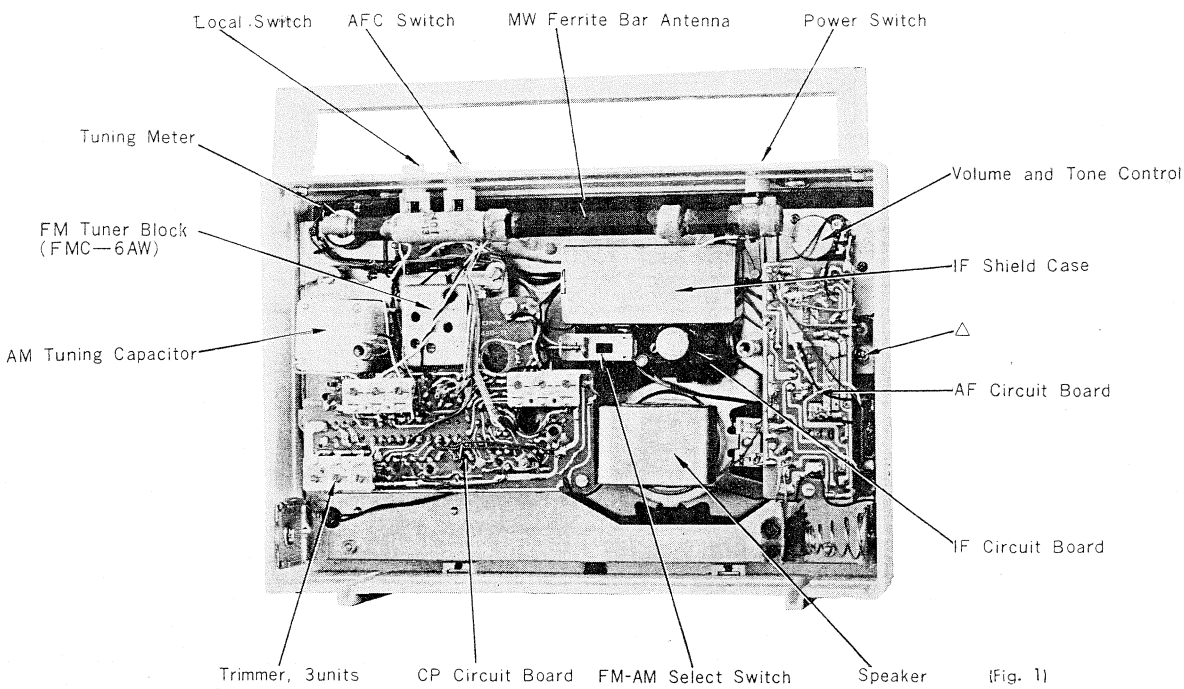
(1) Remove the CP Circuit Board.
(2) Unsolder all the leads at the FM Tuner and AM Tuning Capacitor.
(3) Remove the four Sub-Chassis Holding Screws. (Two of them are marked with ● in Fig. 2).
(4) Remove the Sub-Chassis from the Chassis gently taking care not to cut the Dial Cord.
(5) Remove the Tuner Gear Holding Screw at the FM Tuning Capacitor.
(6) Remove the Tuner Gear at the FM Tuning Capacitor.
(7) Remove the four FM Tuner (FMC-6AW) Holding Screws. The FM Tuner (FMC-6AW) can now be removed.

Removal of IF Circuit Board

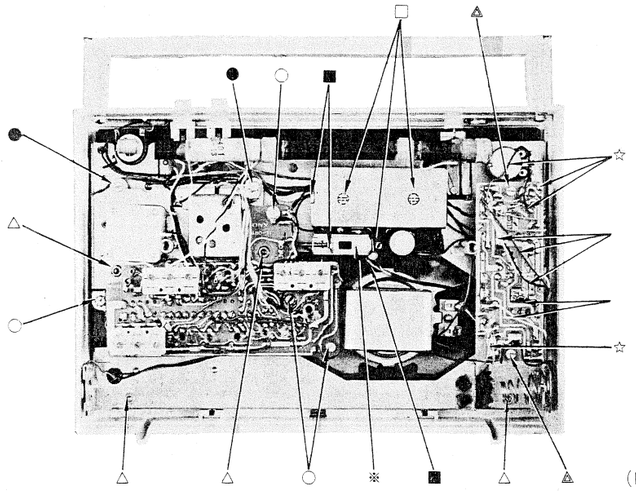
(1) Unsolder the IF Shield Case Cover, FM-AM Select Switch Plate and Coaxial Cable marked with ■ shown in Fig. 2.
(2) Take out the FM-AM Select Switch Plate marked with ⁘ shown in Fig. 2.
(3) Remove the two FM-AM Select Switch Bracket Holding Screws.
(4) Remove the three Screws marked with □ shown in Fig. 2.
(5) Remove the IF Circuit Board from Chassis gently taking care not to cut the leads.

Removal of AF Circuit Board

(1) Remove the two Screws marked with △ shown in Fig. 2.
(2) Unsolder the four leads on the AF Circuit Board marked with ☆ shown in Fig. 2.

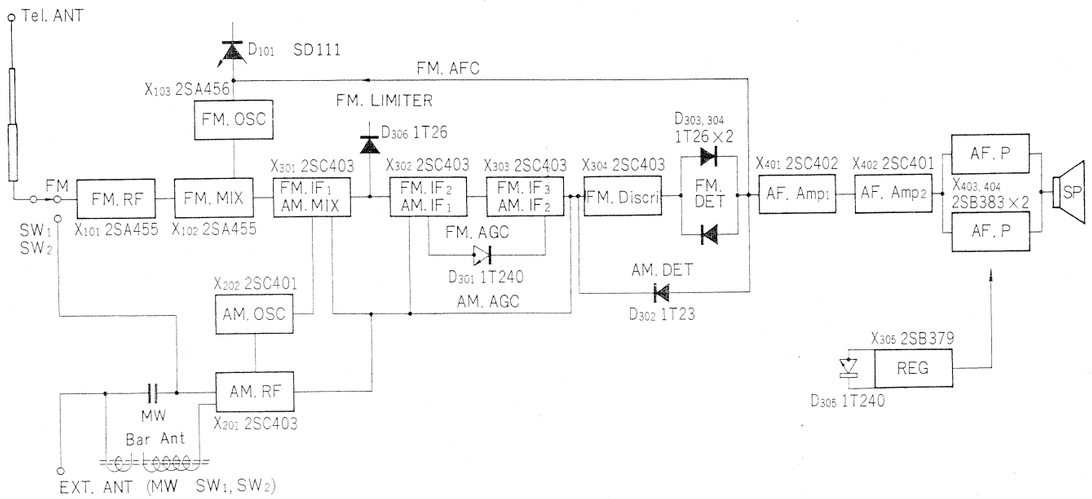


(Fig. 1)

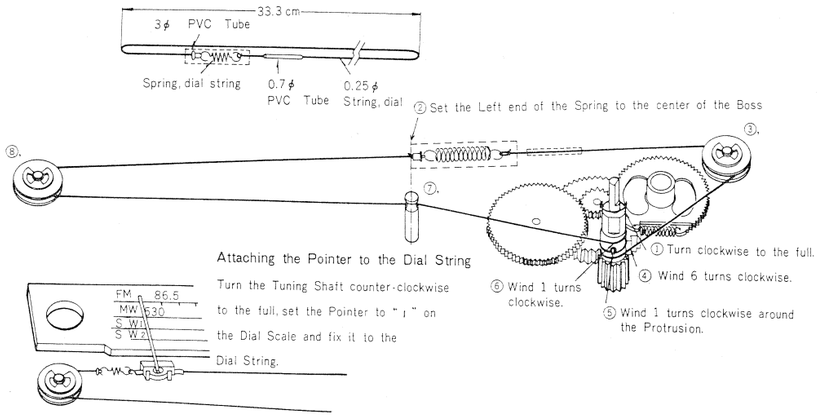


(Fig. 2)

Block Diagram



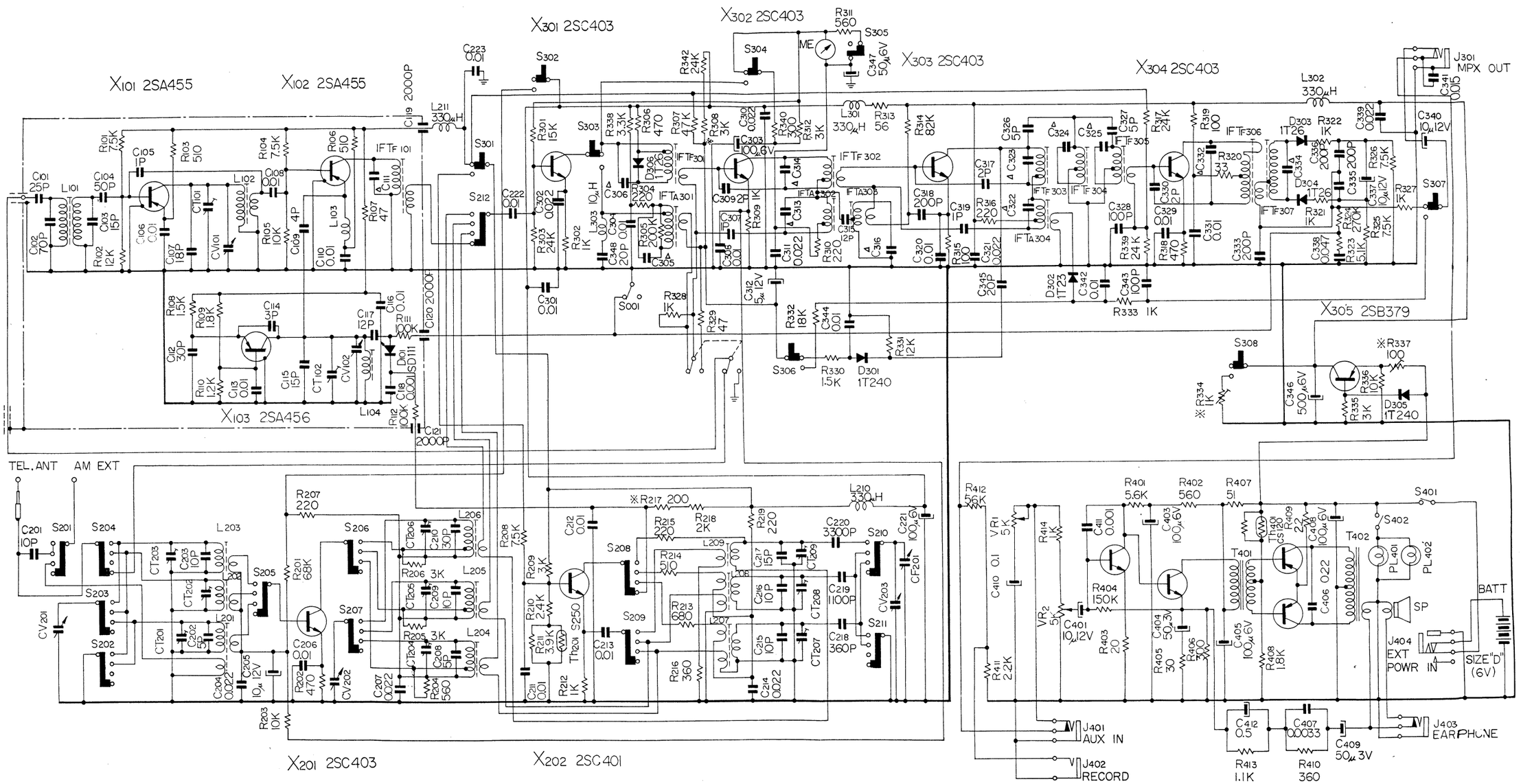
To String the Dial Cord



Frequency Coverage and Tracking Adjustment

Adj. Item	SSG (Standard Signal Generator) Coupling	SSG Freq.	Receiving Dial Setting	Connect VTVM	Adjust	Remarks
FM Frequency Coverage	SSG — Rec *Unnecessary the Dummy Antenna. Connect the SSG to the Antenna terminal (marked with RED on the CP Circuit Board) and ground.	85.5Mc (400 c/s ±22.5 Kc FM MOD.)	Fully Left	Across 8Ω Load Resistor	FM OSC Coil (L_{104})	Adjust for maximum deflection. Fine Tuning: Set the slit mark on the Fine Tuning Knob in the vertical direction Volume: Max. Tone: High Local: OFF AFC: OFF Power supply: DC 6V
		109.5 Mc (〃)	Fully Right		FM OSC Trimmer (CT_{102})	
FM Tracking	—ditto—	85.5 Mc (〃)	Tune to 85.5 Mc Signal	—ditto—	FM RF Coil (L_{102})	—ditto—
		109.5 Mc (〃)	Tune to 109.5Mc Signal		FM RF Trimmer (CT_{101})	
SW_1 Frequency Coverage	SSG — 10p — Rec Connect the SSG to the Antenna terminal (marked with RED on the CP Circuit Board) and ground of the set through the Dummy Antenna.	1.55 Mc (1000 c/s 30% AM MOD)	Fully Left	—ditto—	SW_1 OSC Coil (L_{208})	—ditto—
		4.7 Mc (〃)	Fully Right		SW_1 OSC Trimmer (CT_{208})	
SW_1 Tracking	—ditto—	1.55 Mc (〃)	Tune to 1.55Mc Signal	—ditto—	SW_1 ANT Coil (L_{202}) SW_1 RF Coil (L_{205})	—ditto—
		4.7 Mc (〃)	Tune to 4.7 Mc Signal		SW_1 ANT Trimmer (CT_{207}) SW_1 RF Trimmer (CT_{205})	
SW_2 Frequency Coverage	—ditto—	4.6 Mc (1000 c/s 30% AM MOD.)	Fully Left	—ditto—	SW_2 OSC Coil (L_{209})	—ditto—
		12.6 Mc (〃)	Fully Right		SW_2 OSC Trimmer (CT_{209})	
SW_2 Tracking	—ditto—	4.6 Mc (〃)	Tune to 4.6 Mc Signal	—ditto—	SW_2 ANT Coil (L_{203}) SW_2 RF Coil (L_{206})	—ditto—
		12.6 Mc (〃)	Tune to 12.6 Mc Signal		SW_2 ANT Trimmer (CT_{203}) SW_2 RF Trimmer (CT_{206})	
MW Frequency Coverage	Loop Antenna	520 Kc (〃)	Fully Left	—ditto—	MW OSC Coil (L_{207})	—ditto—
		1680 Kc (〃)	Fully Right		MW OSC Trimmer (CT_{207})	
MW Tracking	—ditto—	620 Kc (〃)	Tune to 620 Kc Signal	—ditto—	MW ANT Coil (L_{201}) MW RF Coil (L_{204})	—ditto—
		1,400 Kc (〃)	Tune to 1,400Kc Signal		MW ANT Trimmer (CT_{201}) MW RF Trimmer (CT_{204})	

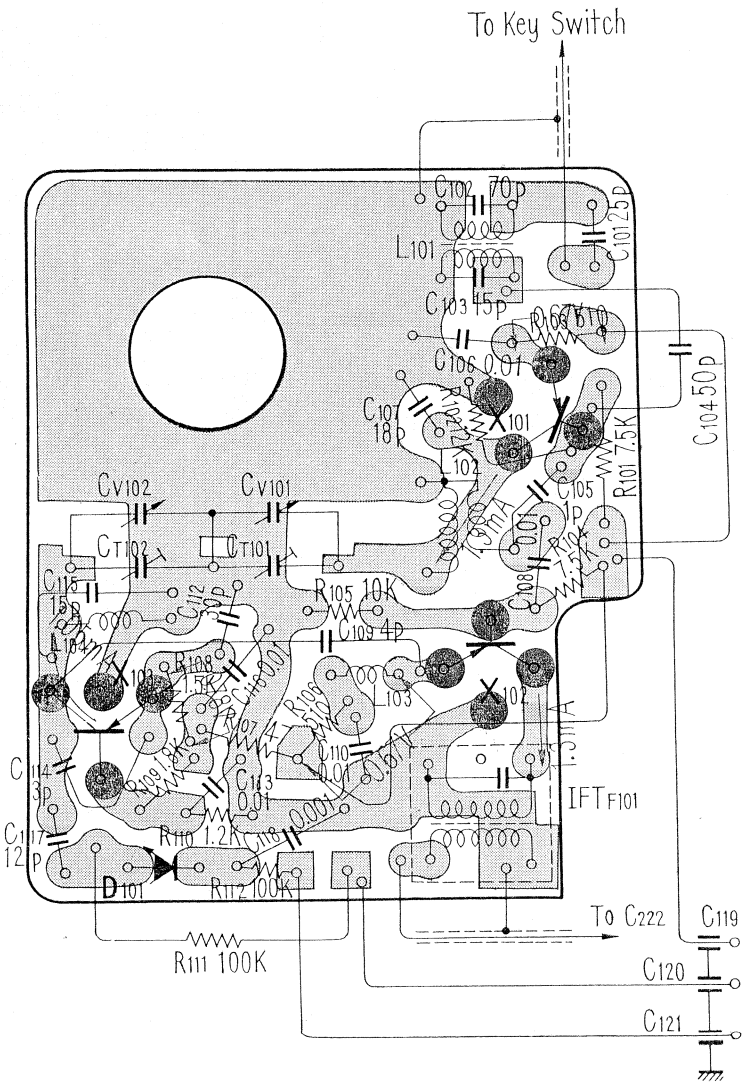
Circuit Schematic



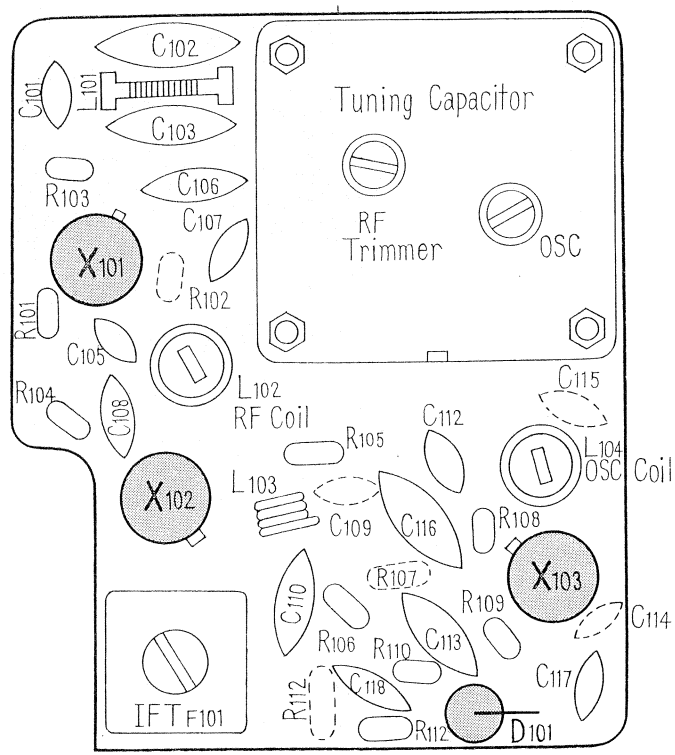
Mounting Diagram

FM Tuner Section (FMC-6AW)

— Printed Side —



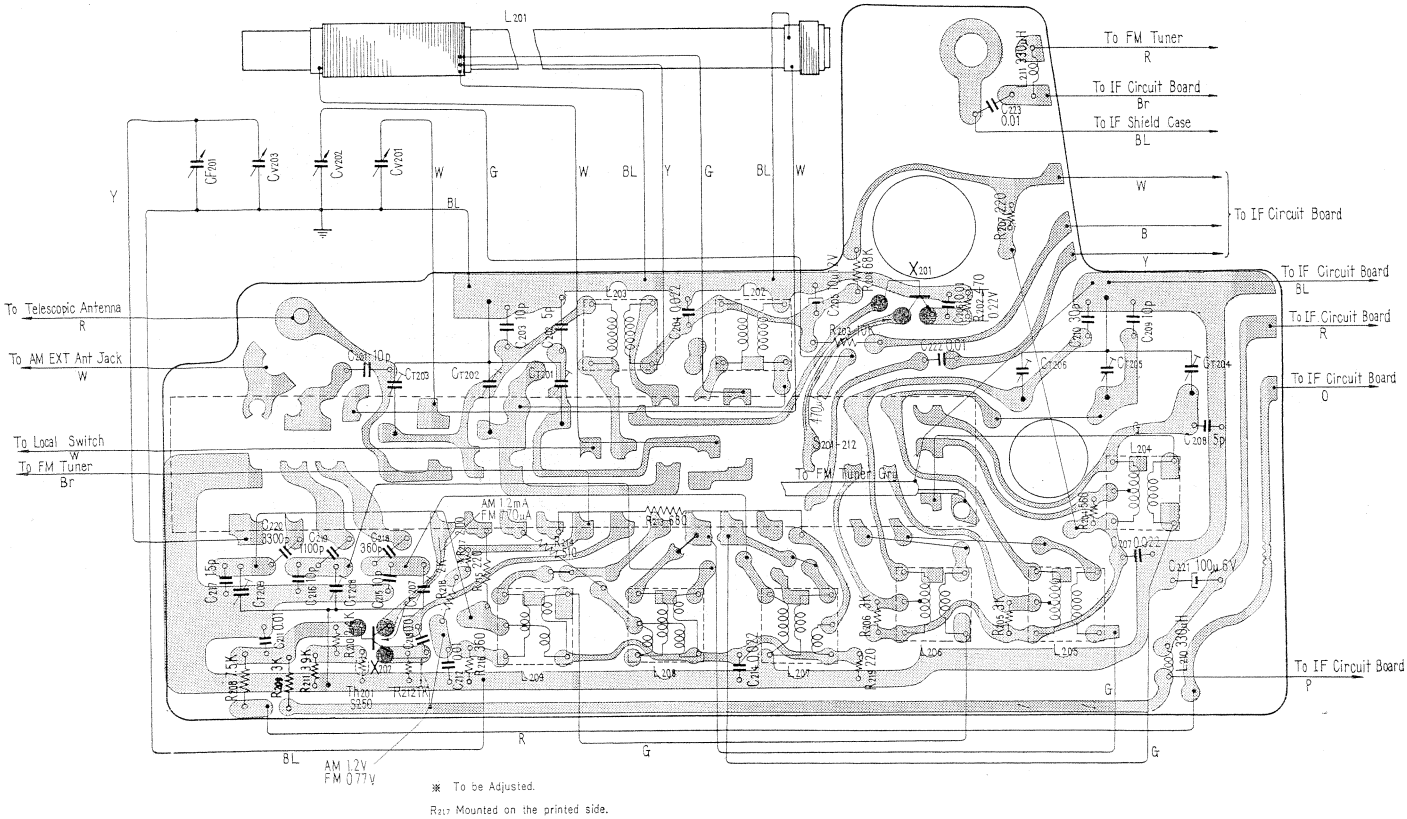
— Parts Side —



Mounting Diagram

AM Coil Pack Section

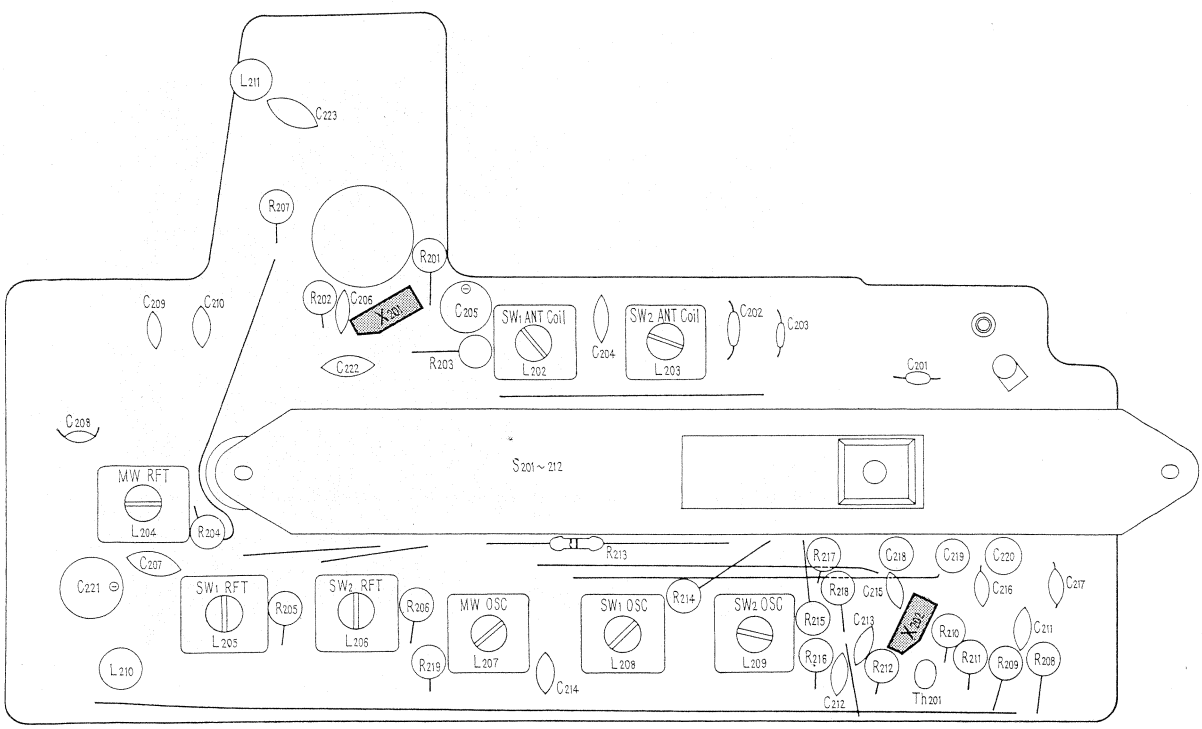
—Printed Side—



※ To be Adjusted.

R_{217} Mounted on the printed side.

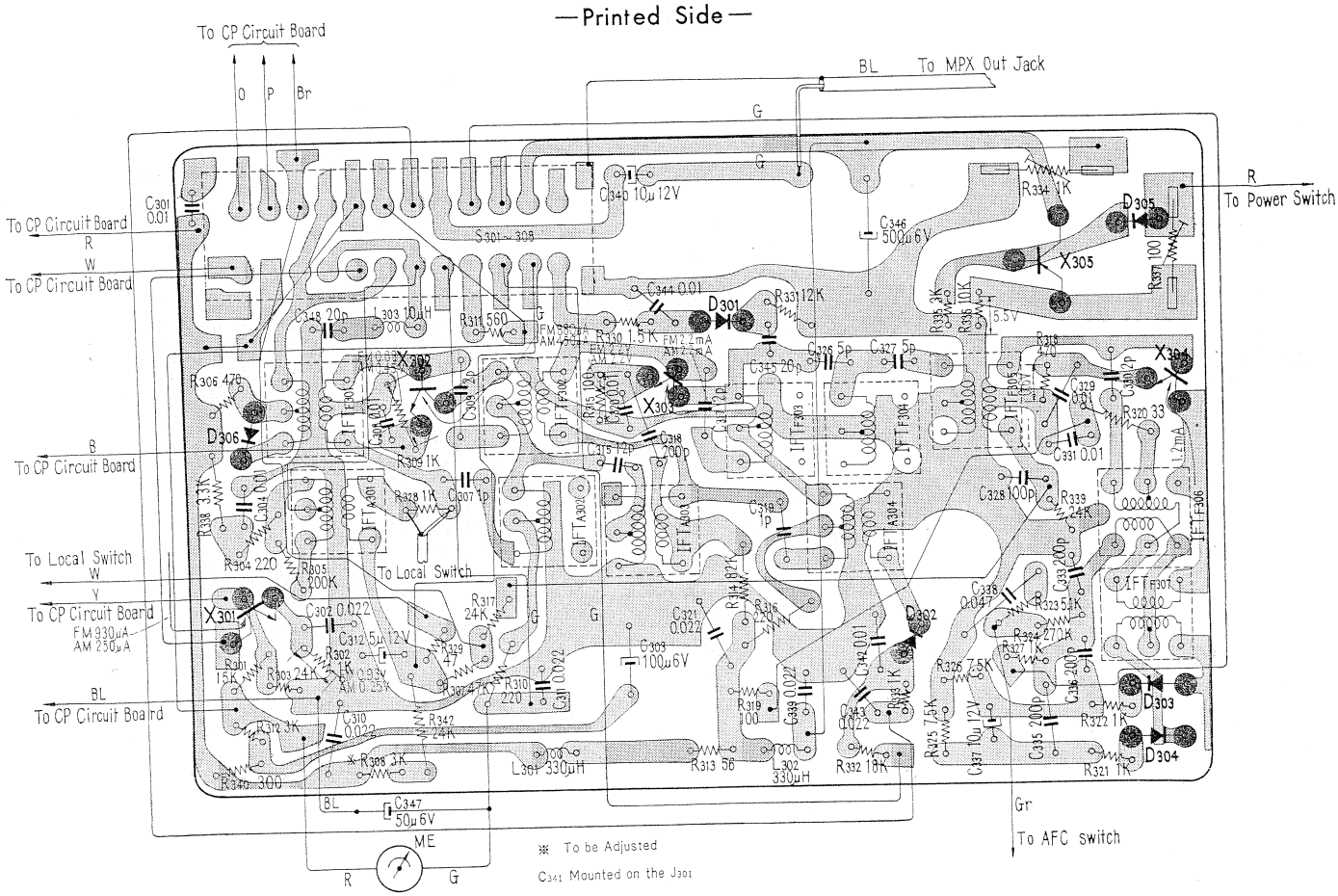
—Parts Side—



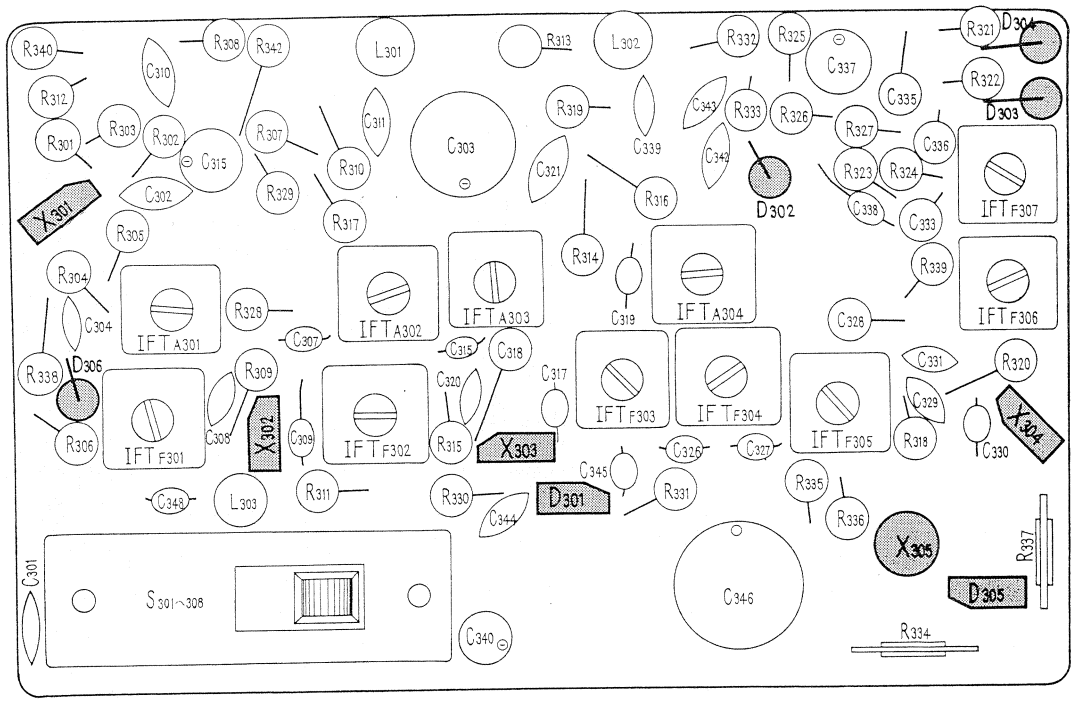
Mounting Diagram

IF Section

—Printed Side—



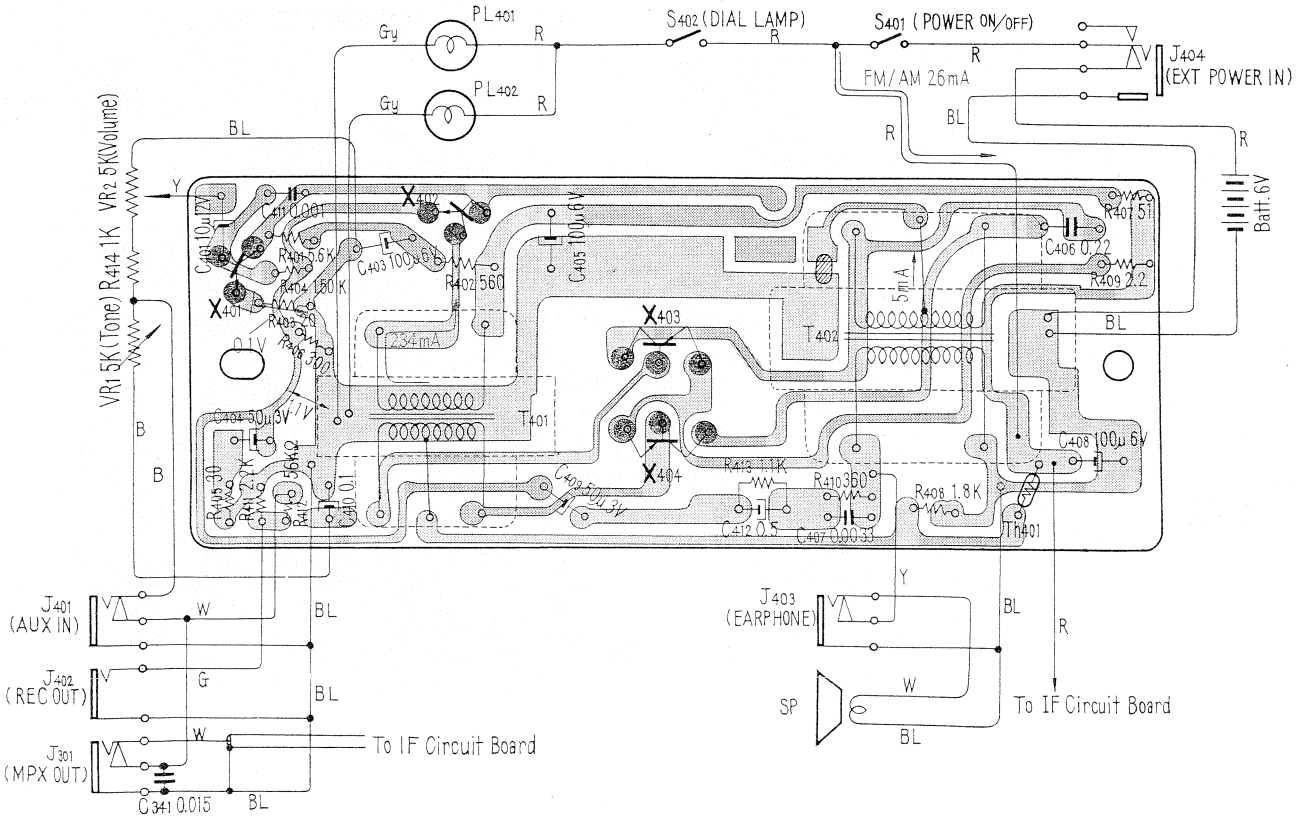
—Parts Side—



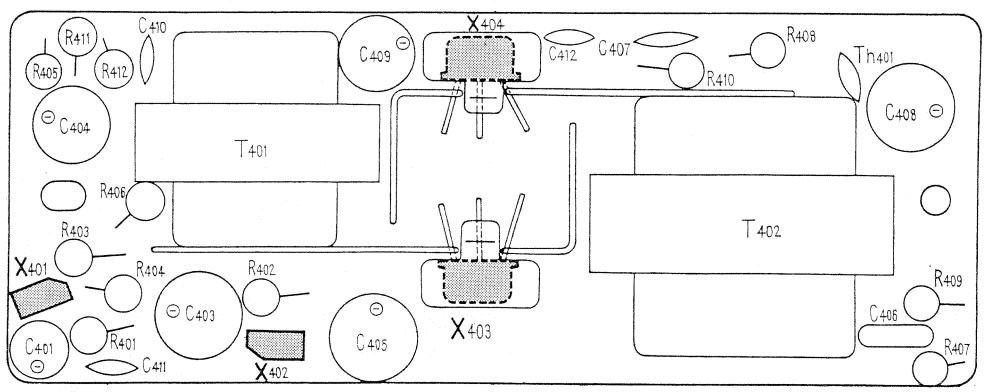
Mounting Diagram

AF Section (AF.1A)

—Printed Side—



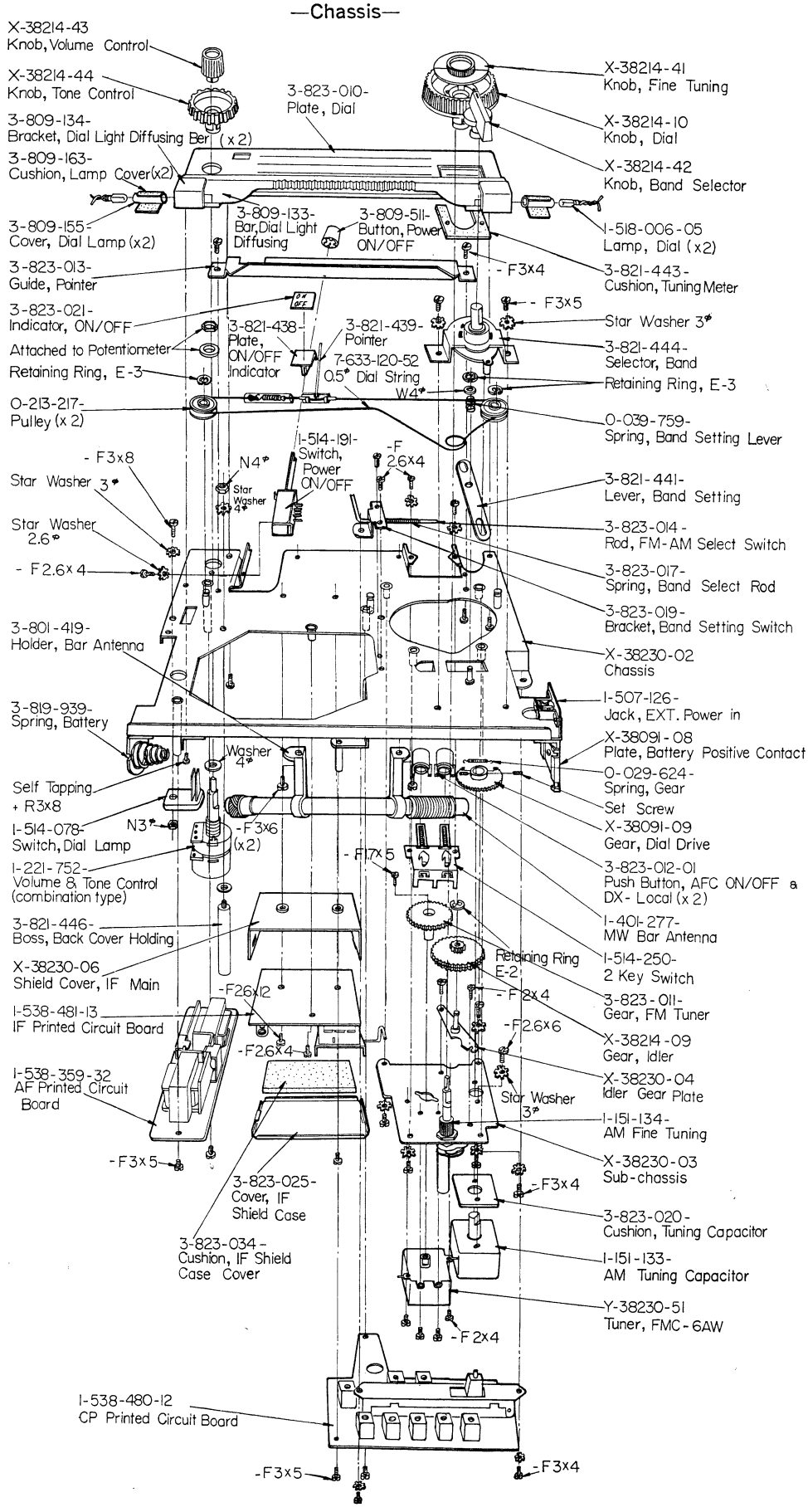
—Parts Side—



R413 Mounted on the printed side.

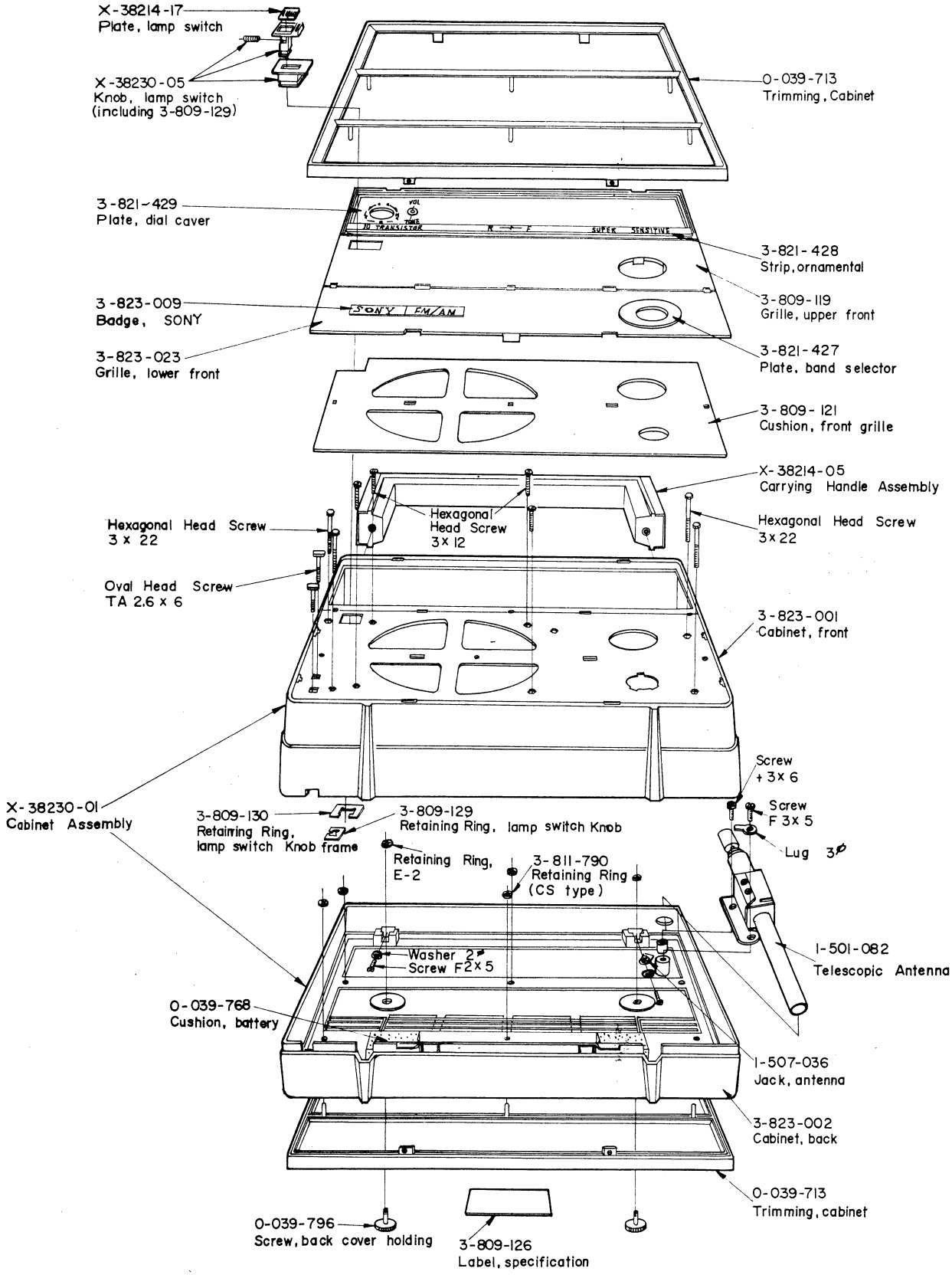
Exploded Diagram

—Chassis—



Exploded Diagram

--Cabinet—



Electrical Parts List

Part No.	Symbol	Description
1-501-082-11	Tel. ANT	Antenna, telescopic
1-401-216-11	L_{101}	Coil, FM antenna
1-425-162-11	L_{102}	〃 FM RF
1-405-282-11	L_{103}	〃 Injection
-135-11	L_{104}	〃 FM oscillator
1-401-277-13	L_{201}	〃 MW ferrite bar antenna
-286-11	L_{202}	〃 SW_1 antenna
-287-11	L_{203}	〃 SW_2 〃
1-425-232-11	L_{204}	〃 MW RF
-272-11	L_{205}	〃 SW_1 〃
-273-11	L_{206}	〃 SW_2 〃
1-405-275-11	L_{207}	〃 MW oscillator
-289-12	L_{208}	〃 SW_1 〃
-290-11	L_{209}	〃 SW_2 〃
1-407-050-11	L_{210}	Inductor, micro 330μF
-050-11	L_{211}	〃 330μF
-050-11	L_{301}	〃 330μF
-050-11	L_{302}	〃 330μF
-082-11	L_{303}	〃 10μF
1-403-231-11	IFT_{F101}	Transformer, FM IF signal tuned
-243-15	IFT_{F301}	〃
-244-15	IFT_{F302}	〃
-244-15	IFT_{F303}	〃
-244-15	IFT_{F304}	〃
-244-15	IFT_{F305}	〃
-272-15	IFT_{F306}	Discriminator (primary)
-273-15	IFT_{F307}	〃 (secondary)
-026-15	IFT_{A301}	Transformer, AM IF single tuned
-110-15	IFT_{A302}	〃 〃
-026-15	IFT_{A303}	〃 〃
-110-15	IFT_{A304}	〃 〃
1-423-100-11	T_{401}	〃 driver
1-427-088-11	T_{402}	〃 output
1-507-011-11	J_{301}	Jack, MPX out
-011-11	J_{401}	〃 AUX in
-011-11	J_{402}	〃 REC. out
-011-11	J_{403}	〃 Earphone
-126-11	J_{404}	〃 EXT power in
-036-11	EXT ANT	〃 AM EXT ANT
1-514-250-12	S_{001}	Switch, AFC ON-OFF
	S_{002}	〃 AM DX/Local
	S_{003}	〃 FM 〃
1-513-314-11	$S_{201\sim212}$	〃 AM band setting
-275-11	$S_{301\sim308}$	〃 FM 〃
1-514-191-02	S_{401}	〃 power ON-OFF
-078-00	S_{402}	〃 dial lamp
1-520-058-11	ME	Meter, tuning
1-502-069-21	SP	Speaker, 8Ω
1-518-006-02	PL_{401}	Lamp, dial
	PL_{402}	〃
1-528-001-01	Batt	Battery, 6V in total
	X_{101}	Transistor 2SA455
	X_{102}	〃 2SA455
	X_{103}	〃 2SA456
	X_{201}	〃 2SC403
	X_{202}	〃 2SC401
	X_{301}	〃 2SC403
	X_{302}	〃 2SC403
	X_{303}	〃 2SC403
	X_{304}	〃 2SC403
	X_{305}	〃 2SB379
	X_{401}	〃 2SC402
	X_{402}	〃 2SC401
	X_{403}	〃 2SB383
	X_{404}	〃 2SB383
	D_{101}	Diode SD-111
	D_{301}	Diode 1T240
	D_{302}	〃 1T23
	D_{303}	〃 1T26
	D_{304}	〃 1T26
	D_{305}	〃 1T240
	D_{306}	〃 1T26
8-690-004-00	Th_{201}	Thermistor S250
8-691-001-01	Th_{401}	〃 CS120
		Resistor
1-221-752-11	VR_1	5KΩ Tone Control
	VR_2	5KΩ Volume Control
1-208-054-11	R_{101}	7.5KΩ 1/10W Ceramic
-059-11	R_{102}	12KΩ 〃 〃
-026-11	R_{103}	510Ω 〃 〃
-054-11	R_{104}	7.5KΩ 〃 〃
-057-11	R_{105}	10KΩ 〃 〃
-026-11	R_{106}	510Ω 〃 〃
-105-11	R_{107}	47Ω 〃 〃
-037-11	R_{108}	1.5KΩ 〃 〃
-039-11	R_{109}	1.8KΩ 〃 〃
-035-11	R_{110}	1.2KΩ 〃 〃
1-201-868-11	R_{111}	100KΩ 1/8W Composition
1-208-145-11	R_{112}	100KΩ 1/10W Ceramic
1-240-517-11	R_{201}	68KΩ 1/8W Carbon
-465-11	R_{202}	470Ω 〃 〃
-497-11	R_{203}	10KΩ 〃 〃
-467-31	R_{204}	560Ω 〃 〃
-484-31	R_{205}	3KΩ 〃 〃
-484-31	R_{206}	3KΩ 〃 〃
-457-31	R_{207}	220Ω 〃 〃
-494-11	R_{208}	7.5KΩ 〃 〃
-464-11	R_{209}	3KΩ 〃 〃
-482-11	R_{210}	2.4KΩ 〃 〃
-487-11	R_{211}	3.9KΩ 〃 〃
-473-11	R_{212}	1KΩ 〃 〃
1-244-469-11	R_{213}	680Ω 〃 〃
-466-11	R_{214}	510Ω 〃 〃
-457-11	R_{215}	220Ω 〃 〃
1-240-462-11	R_{216}	360Ω 〃 〃
-456-11	*R_{217}	200Ω 〃 〃
-480-11	R_{218}	2KΩ 〃 〃
-457-31	R_{219}	220Ω 〃 〃
-501-11	R_{301}	15KΩ 〃 〃
-473-11	R_{302}	1KΩ 〃 〃
-506-11	R_{303}	24KΩ 〃 〃
-457-11	R_{304}	220Ω 〃 〃
-528-31	R_{305}	200KΩ 〃 〃
-465-31	R_{306}	470Ω 〃 〃
-513-11	R_{307}	47KΩ 〃 〃
-484-11	*R_{308}	3KΩ 〃 〃
-473-11	R_{309}	1KΩ 〃 〃
-457-11	R_{310}	220Ω 〃 〃
-467-11	R_{311}	560Ω 〃 〃
-484-11	R_{312}	3KΩ 〃 〃
-443-31	R_{313}	56Ω 〃 〃
-519-11	R_{314}	82KΩ 〃 〃
-449-11	R_{315}	100Ω 〃 〃
-457-31	R_{316}	220Ω 〃 〃
-506-11	R_{317}	24KΩ 〃 〃
-465-11	R_{318}	470Ω 〃 〃
-449-31	R_{319}	100Ω 〃 〃
-437-31	R_{320}	33Ω 〃 〃
-473-11	R_{321}	1KΩ 〃 〃
-473-11	R_{322}	1KΩ 〃 〃
-490-11	R_{323}	5.1KΩ 〃 〃
-531-11	R_{324}	270KΩ 〃 〃
-494-11	R_{325}	7.5KΩ 〃 〃
-494-11	R_{326}	7.5KΩ 〃 〃
-473-31	R_{327}	1KΩ 〃 〃
-473-31	R_{328}	1KΩ 〃 〃

* To be adjusted

Part No.	Symbol	Description
1-240-441-31	R_{329}	47Ω 1/8W Carbon
-477-11	R_{330}	1.5KΩ 〃 〃
-499-11	R_{331}	12KΩ 〃 〃
-503-11	R_{332}	18KΩ 〃 〃
-473-31	R_{333}	1KΩ 〃 〃
1-221-634-12	*R_{334}	1KΩ Adjustable
1-240-484-11	R_{335}	3KΩ 1/8W Carbon
-497-11	R_{336}	10KΩ 〃 〃
1-221-631-12	*R_{337}	100Ω Adjustable
1-240-485-11	R_{338}	3.3KΩ 1/8W Carbon
-506-11	R_{339}	24KΩ 〃 〃
-460-11	R_{340}	300Ω 〃 〃
	R_{341}	—deleted—
1-240-506-11	R_{342}	24KΩ 1/8W Carbon
1-201-864-11	R_{401}	5.6KΩ 〃 Composition
-872-11	R_{402}	560Ω 〃 〃
-951-11	R_{403}	20Ω 〃 〃
1-202-113-11	R_{404}	150KΩ 〃 〃
1-201-278-11	R_{405}	30Ω 〃 〃
-277-11	R_{406}	300Ω 〃 〃
-968-11	R_{407}	51Ω 〃 〃
-650-11	R_{408}	1.8KΩ 〃 〃
-401-11	R_{409}	2.2Ω 1/4W 〃
-859-11	R_{410}	360Ω 1/8W 〃
-863-11	R_{411}	2.2KΩ 〃 〃
1-202-085-11	R_{412}	56KΩ 〃 〃
1-201-637-11	R_{413}	1.1KΩ 〃 〃
-862-11	R_{414}	1KΩ 〃 〃
		Capacitor
1-151-088-12	$CV_{101\sim102}$	Capacitor, FM tuning
	$CT_{101\sim102}$	Trimmer, 2 units (FM)
-133-11	$CV_{201\sim203}$	Capacitor, AM tuning
1-141-015-00	$CT_{201\sim209}$	Trimmer, 3 units ×3 (AM)
1-151-134-11	C_{F201}	Capacitor, fine tuning (AM)
1-101-090-11	C_{101}	25pF Ceramic
-791-11	C_{102}	70pF 〃
-861-11	C_{103}	15pF 〃
-028-11	C_{104}	50pF 〃
-951-11	C_{105}	1pF 〃
-141-11	C_{106}	0.01μF 〃
-862-11	C_{107}	18pF 〃
-141-11	C_{108}	0.01μF 〃
-954-11	C_{109}	4pF 〃
-141-11	C_{110}	0.01μF 〃
	C_{111}	—deleted—
1-101-871-11	C_{112}	30pF Ceramic
-141-11	C_{113}	0.01μF 〃
-953-11	C_{114}	3pF 〃
-861-11	C_{115}	15pF 〃
-141-11	C_{116}	0.01μF 〃
-961-11	C_{117}	12pF 〃
1-105-821-12	C_{118}	0.001μF Mylar
1-101-799-11	C_{119}	2000pF Feed Through
-799-11	C_{120}	2000pF 〃
-799-11	C_{121}	2000pF 〃
-959-11	C_{201}	10pF Ceramic
-955-11	C_{202}	5pF 〃
-959-11	C_{203}	10pF 〃
1-105-413-12	C_{204}	0.022μF Mylar
1-121-282-11	C_{205}	10μF 12V Electrolytic
1-105-411-12	C_{206}	0.01μF Mylar
-413-12	C_{207}	0.022μF 〃
1-101-955-11	C_{208}	5pF Ceramic
-959-11	C_{209}	10pF 〃
-871-11	C_{210}	30pF 〃
1-105-411-12	C_{211}	0.01μF Mylar
-411-12	C_{212}	0.01μF 〃
-411-12	C_{213}	0.01μF 〃
-413-12	C_{214}	0.022μF 〃

Part No.	Symbol	Description
1-101-959-11	C_{215}	10pF Ceramic
-959-11	C_{216}	10pF 〃
-861-11	C_{217}	15pF 〃
1-103-614-11	C_{218}	360pF Styrol
-626-11	C_{219}	1100pF 〃
-637-11	C_{220}	3300pF 〃
1-121-291-11	C_{221}	100μF 6V Electrolytic
1-105-411-12	C_{222}	0.01μF Mylar
1-101-141-11	C_{223}	0.01μF Ceramic
-141-11	C_{301}	0.01μF 〃
1-105-413-12	C_{302}	0.022μF Mylar
1-121-291-11	C_{303}	100μF 6V Electrolytic
1-105-411-12	C_{304}	0.01μF Mylar
	C_{305}	Built-in $IFTA_{301}$
	C_{306}	Built-in $IFTF_{301}$
1-101-951-11	C_{307}	1pF Ceramyc
1-105-411-12	C_{308}	0·01μF Mylar
1-101-952-11	C_{309}	2pF Ceramic
1-105-413-12	C_{310}	0.022μF Mylar
-413-12	C_{311}	0.022μF 〃
1-121-280-11	C_{312}	5μF 12V Electrolytic
	C_{313}	Built-in $IFTA_{302}$
	C_{314}	Built-in $IFTF_{302}$
1-101-961-11	C_{315}	12pF Ceramic
	C_{316}	Built-in $IFTA_{303}$
1-101-952-11	C_{317}	2pF Ceramic
1-103-608-11	C_{318}	200pF Styrol
1-101-951-11	C_{319}	1pF Ceramic
1-105-411-12	C_{320}	0.01μF Mylar
-413-12	C_{321}	0.022μF 〃
	C_{322}	Built-in $IFTA_{304}$
	C_{323}	Built-in $IFTF_{303}$
	C_{324}	Built-in $IFTF_{304}$
	C_{325}	Built-in $IFTF_{305}$
1-101-955-11	C_{326}	5pF Ceramic
-955-11	C_{327}	5pF 〃
1-103-601-11	C_{328}	100pF Styrol
1-105-411-12	C_{329}	0.01μF Mylar
1-101-952-11	C_{330}	2pF Ceramic
1-105-411-12	C_{331}	0.01μF Mylar
	C_{332}	Built-in $IFTF_{306}$
1-103-608-11	C_{333}	200pF Styrol
	C_{334}	Built-in $IFTF_{307}$
1-103-608-11	C_{335}	200pF Styrol
-608-11	C_{336}	200pF 〃
1-121-282-11	C_{337}	10μF 12V Electrolytic
1-127-044-11	C_{338}	0.047μF Alox
1-105-413-12	C_{339}	0.022μF Mylar
1-121-282-11	C_{340}	10μF 12V Electrolytic
1-105-412-11	C_{341}	0.015μF Mylar
-411-12	C_{342}	0.01μF 〃
-413-12	C_{343}	0.022μF 〃
-411-12	C_{344}	0.01μF 〃
1-101-864-11	C_{345}	20pF Ceramic
1-121-359-11	C_{346}	500μF 6V Electrolytic
-322-11	C_{347}	50μF 6V 〃
1-101-864-11	C_{348}	20pF Ceramic
1-121-282-11	C_{401}	10μF 12V Electrolytic
	C_{402}	—deleted—
1-121-315-11	C_{403}	100μF 6V Electrolytic
-287-11	C_{404}	50μF 3V 〃
-315-11	C_{405}	100μF 6V 〃
1-105-419-12	C_{406}	0.22μF Mylar
-827-12	C_{407}	0.0033μF 〃
1-121-315-11	C_{408}	100μF 6V Electrolytic
-287-11	C_{409}	50μF 3V 〃
1-127-019-11	C_{410}	0.1μF Alox
1-105-821-12	C_{411}	0.001μF Mylar
1-127-022-11	C_{412}	0.5μF Alox

* To be adjusted

SONY CORPORATION

Serial No. 45,001 and after

TFM-1000W

No. 2

PRODUCTION CHANGE

(Change of Former Service Manual at Page 10 and 11)

Former Type

Serial No. Up to 45,000

Part No.	Description	Q'ty
X-38230-02-2	Chassis Ass'y	1
-01-1	Cabinet Ass'y	1
3-823-001-01	Cabinet, front	1
-002-02	〃 , back	1
3-998-001-03	Battery Cylinder	1
0-039-796-00	Screw, back cover holding	2

New Type

Serial No. 45,001 and After

Part No.	Description	Q'ty
X-38230-12-2	Chassis Ass'y	1
-15-1	Cabinet Ass'y	1
3-823-071-01	Cabinet, front	1
-042-02	〃 , back	1
3-998-010-04	Battery Cylinder	1
7-621-661-66	Screw, back cover holding	2

Additional

Part No.	Description	Q'ty
3-823-043-01	Lid, battery	1
-048-02	Special Nut	3
-049-01	Coil, spring	2
-050-01	Pin, ext. antenna	2
-058-02	Knob, lock	1
-059-01	Plate, lock	1
-060-02	Spring, lock	1
-061-01	Washer, lock	1
3-821-473-03	Crystal Lid	1
7-621-461-46	Screw, machine +T 3×6	3
-721-61	〃 , tapping +R 2.6×5	3
-722-41	〃 , tapping +R 3×6	5
7-624-106-01	Retaining Ring, E-3	2

Deleted

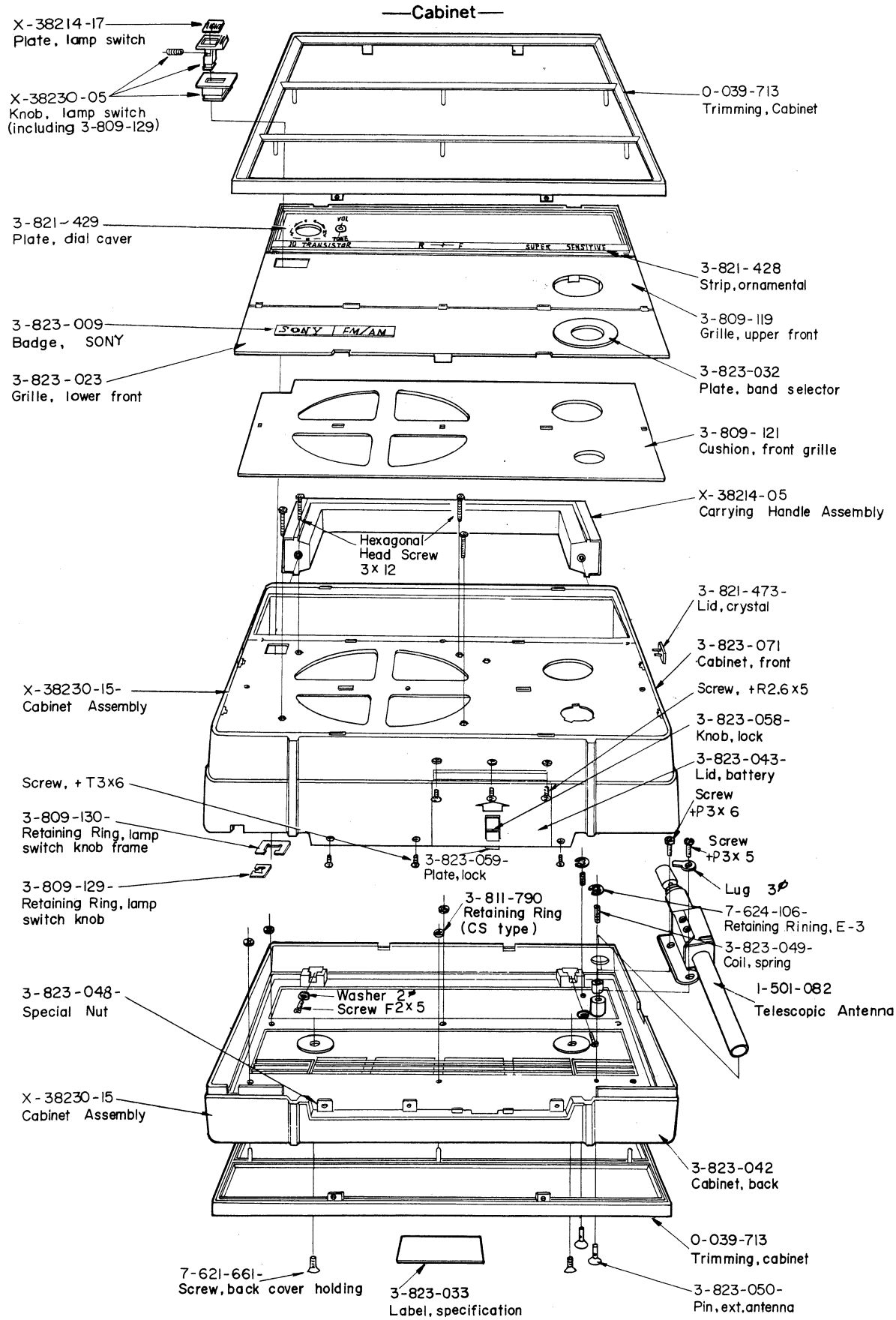
Part No.	Description	Q'ty
0-039-768-00	Cushion	2
3-822-948-01	Screw, TA2.6×6	2
7-621-999-03	〃 , hexagonal 3×12	4
-999-33	〃 , hexagonal 3×22	5
7-622-107-02	Nut, 2.6ϕ	2
-108-02	〃 , 3ϕ	5
1-507-036-02	Jack, antenna	1

SONY®

SERVICE MANUAL

FM-1000W

Exploded Diagram



Exploded Diagram

—Chassis—